Backing
Up Your Files

Objectives

- ► **Develop a backup strategy**
- ► **Copy files to a hard drive**
- ► **Start Backup**
- ► **Select files for a backup**
- ► **Perform a normal backup**
- ► **View and print a backup report**
- ► **Perform an incremental backup**
- ► **Restore a backed up file**
- ► **Delete a backup set**

Making backup copies of your files is an important task to perform on a regular basis, so you don't lose valuable data if your computer encounters problems. The term **back up** (or **backup**, when referring to the noun or adjective) usually refers to the process of using a special software program designed to read your data quickly, compress it into a small, efficient space, then store it on a medium, such as a set of disks or a tape cartridge. Windows XP Professional includes a program called Backup. Using Backup has several advantages over simply copying files to a floppy disk, including compressing files as they are copied so that you can fit more onto a floppy disk, and splitting a large file across two or more floppies, something you cannot do with the Copy command. Also, in an emergency, Backup offers several data-recovery aids to help you locate and restore important files quickly. John Casey, the owner of Wired Coffee Company, uses Backup to back up important files on a floppy disk.
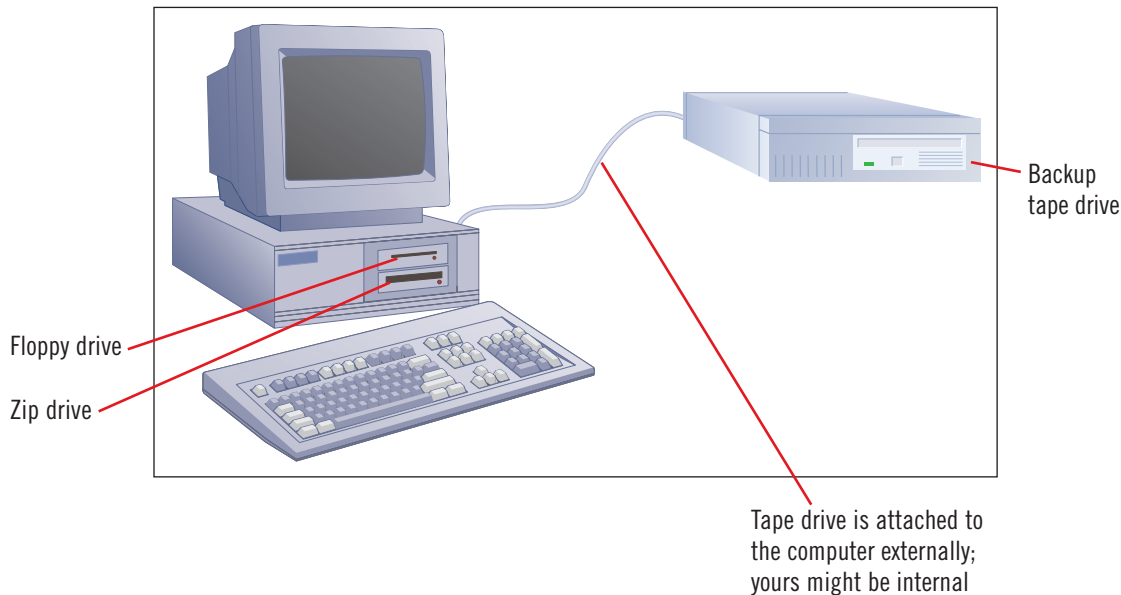
Developing a Backup Strategy

With Backup, you can back up files from a local or network hard drive to a floppy disk, a zip disk, a network drive, or a tape drive that is attached to your computer, as shown in Figure O-1. This unit assumes you are using a floppy disk as your backup medium and focuses primarily on backup strategies using floppies. Before you back up files, it is a good idea to develop a backup strategy. A **backup strategy** is a method for regularly backing up your work that balances trade-offs between safety, time, and media space. For example, if safety were your only concern, you could back up your entire hard drive every hour. But you would not have any time to work, and you would spend a fortune on backup tapes. If spending minimal time and money on backups were your only concern, you might back up only a few crucial files once a month. The best choice is a balance between the two extremes. The **backup medium** that you use to store backed up files from a hard drive is usually a set of floppy or zip disks, or a tape cartridge designed to store computer data. Zip disks and tape cartridges are large capacity backup media that require special hardware on your computer, such as a zip or tape drive. This extra expense may be worthwhile if you depend on your computer for business. ✐ John wants to explore the different methods of backing up files in order to develop a backup strategy. See Table O-1 for a description of a sample weekly backup strategy.

Details

These are some of the different methods for backing up files with Backup:

▶ A **normal backup** copies all selected files to the backup medium, regardless of when the files were last changed, and clears the archive attribute for each file in order to mark the file as backed up. An **archive attribute** is an internal Windows file marker indicating whether a file needs to be backed up.

▶ An **incremental backup** copies only the files that have changed since your most recent normal or incremental backup. It also clears the archive attribute for each file that is backed up. Therefore, the first incremental backup after a normal backup copies all files that have changed since the normal backup, and the second incremental backup copies only those files that have changed since the first incremental backup, and so on.

▶ A **differential backup** copies only the selected files that have changed since your most recent normal or incremental backup. Unlike incremental backups, however, the archive attribute is not cleared during a differential backup. Therefore, successive differential backups copy all the files that have changed since the last normal or incremental backup, not just the ones that have changed since the last differential backup. The first differential backup after a normal backup copies all files that have changed since the normal backup, and the second differential backup copies all the files that have changed since the normal backup, including all files that changed from both differential backups. Since differential backups copy more changed files, they take longer than incremental backups and require more disk or tape space.

▶ A **copy backup** copies all selected files, like a normal backup, but it does not clear the archive attribute. Therefore, you can use it to perform a special backup without affecting your normal backup routine.

▶ A **daily backup** copies all selected files that were changed on the day the backup is done. It does not clear the archive attribute. You can use daily backups to save your day's work without affecting your normal backup routine.

FIGURE O-1: Computer with floppy, zip, and tape drives

Backup
tape drive

Floppy drive

Zip drive

Tape drive is attached to
the computer externally;
yours might be internal

TABLE O-1: Example of a weekly backup strategy

day	tasks to do
Monday, Week 1	Label your medium (floppy disk or tape). If your backup requires more than one medium, label and number all the media in advance, so you can recognize them easily. Insert your first medium into the backup device and perform a normal backup with the Back up everything on this computer option.
Tuesday, Week 1	Reinsert the medium you used for the normal backup and perform an incremental backup. The incremental backup is appended automatically to the normal backup.
Wednesday through Friday, Week 1	Perform incremental backups. Each subsequent incremental backup is appended to the previous backup. If you need more than one medium, you will be prompted to insert another one. After your Thursday backup, you will have a complete rotation set.
Monday through Friday, Week 2	Repeat the cycle with a second set of media. If you need to perform a special backup of selected files, insert a different medium, perform a copy backup, re-insert the previous medium, then continue the normal cycle.
Monday through Friday, Week 3	Repeat the cycle with the first set of media; continue rotating. If you need to backup only the files that have changed during a day, insert a different medium, perform a daily backup, re-insert the previous medium, then continue the normal cycle.

CLUES TO USE

Rotating your backups

For extra security, it is a good idea to rotate backup tapes or disks. For example, if you do a complete normal backup once a week and incremental backups on the intervening days, you might want to keep one week's worth of backup on one tape or set of disks and then use a different tape or set of disks the following week. If your original storage medium and your backup tape or set of disks are both damaged, you will still be able to restore files from the previous time period's backup. The files you restore probably will not be the most current versions, but you will be better off than if you had to re-create everything from scratch. If possible, store your backup tape or disks away from your computers. That way, if you experience a fire or theft, you will not necessarily lose both the original files on your computer and your backups.

Copying Files to a Hard Drive

Backup is designed to back up the contents of a hard drive (or several hard drives) onto a backup medium. However, Backup cannot back up files from one floppy disk to another. In order for you to have files to use while performing the back up, this unit begins by having you copy the files from the folder where your Project Files are located to a hard disk. As you proceed through the lessons, you will back up the files you copied onto the hard disk to a different blank floppy disk. If you do not have access to a hard drive, you might not be able to complete this unit; if this is the case, check with your instructor or technical support person about backing up different files that are already on a network drive. ✏ John prepares to back up his files. In this lesson, you will copy the files in the folder where your Project Files are located to the C: drive (your hard drive might be different), so you can begin to back them up in the next lesson. First you'll create a new folder for the files in the My Documents folder.

Steps 1 2 3 4

1. Click the **Start button** on the taskbar, point to **All Programs**, point to **Accessories**, then click **Windows Explorer**
   The Windows Explorer window opens.

2. In the left pane of Windows Explorer, locate the My Documents folder icon, then, if the **Expand indicator** ⊞ appears next to the icon, click ⊞ to expand the folder

3. In the left pane of Windows Explorer, click the **My Documents folder icon** if necessary, click **File** on the menu bar, point to **New**, click **Folder**, type **John's Backup**, then press **[Enter]**
   The new John's Backup folder appears in the list of folders and files in the My Documents folder. You will use this folder to store your Project Files temporarily.

4. In the left pane of Windows Explorer, click ⊞ next to the My Computer icon, click ⊞ next to the drive icon containing your Project Files, then click the **folder** containing your Project Files
   Windows Explorer displays the contents of the Your Project Files disk, which in this case is a floppy disk, in the right pane, as shown in Figure O-2.

5. Click **Edit** on the menu bar, then click **Select All**
   All the files in the folder containing your Project Files are selected.

6. Click **Edit** on the menu bar, click **Copy To Folder**, click ⊞ next to the My Documents icon in the Copy Items dialog box if necessary, then click the **John's Backup folder**
   The Copy Items dialog box appears, as shown in Figure O-3.

7. Click **Copy**
   The selected files are copied to the John's Backup folder.

8. In the left pane of Windows Explorer, click the **John's Backup folder icon**
   Windows Explorer displays the files in John's Backup folder in the right pane, as shown in Figure O-4. You are now ready to use Backup.

9. Click the **Close button** in the Windows Explorer window
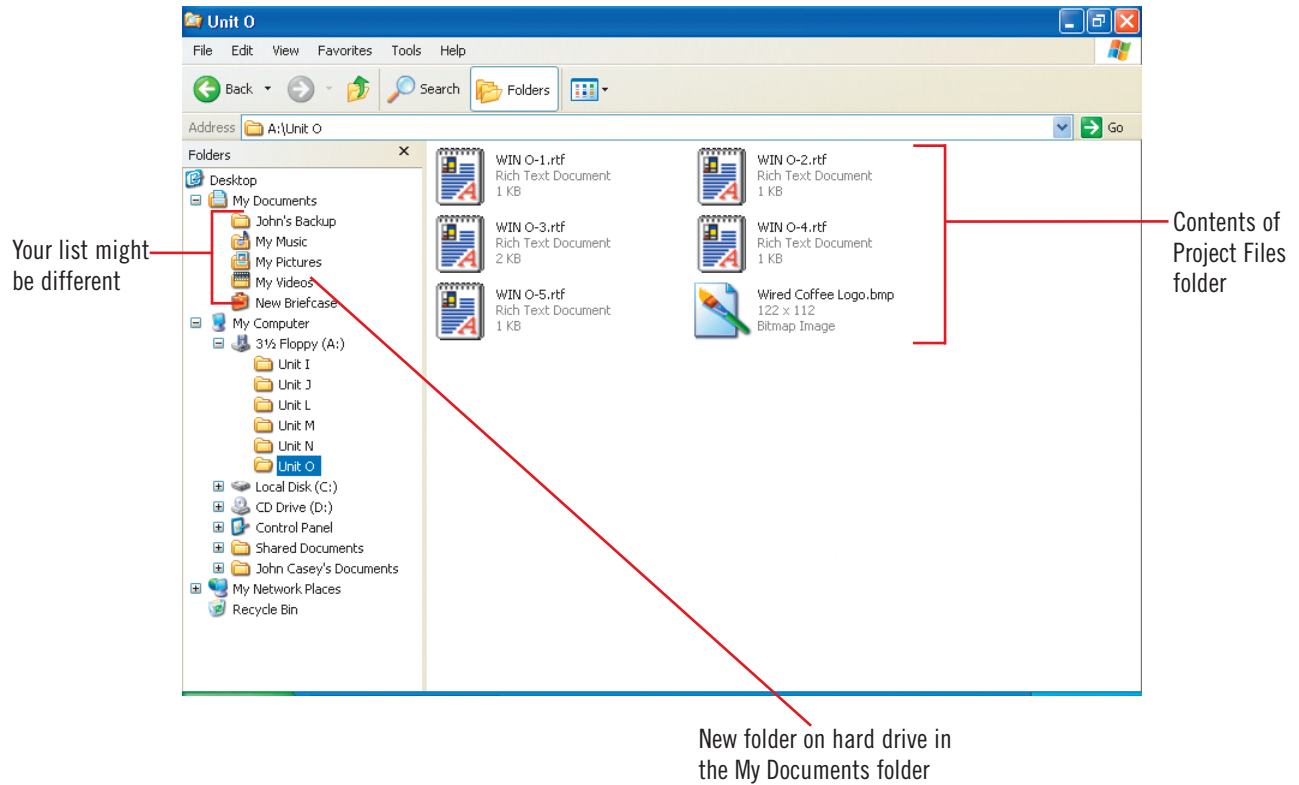
FIGURE O-2: Windows Explorer

Your list might be different
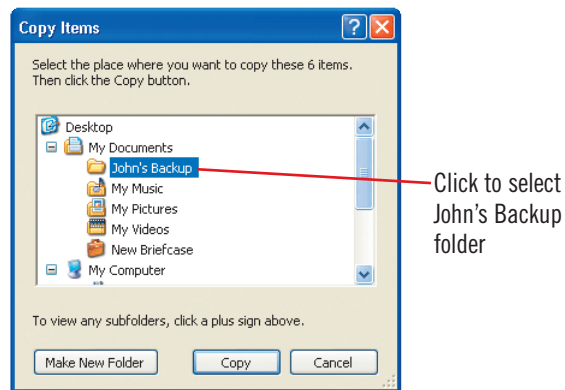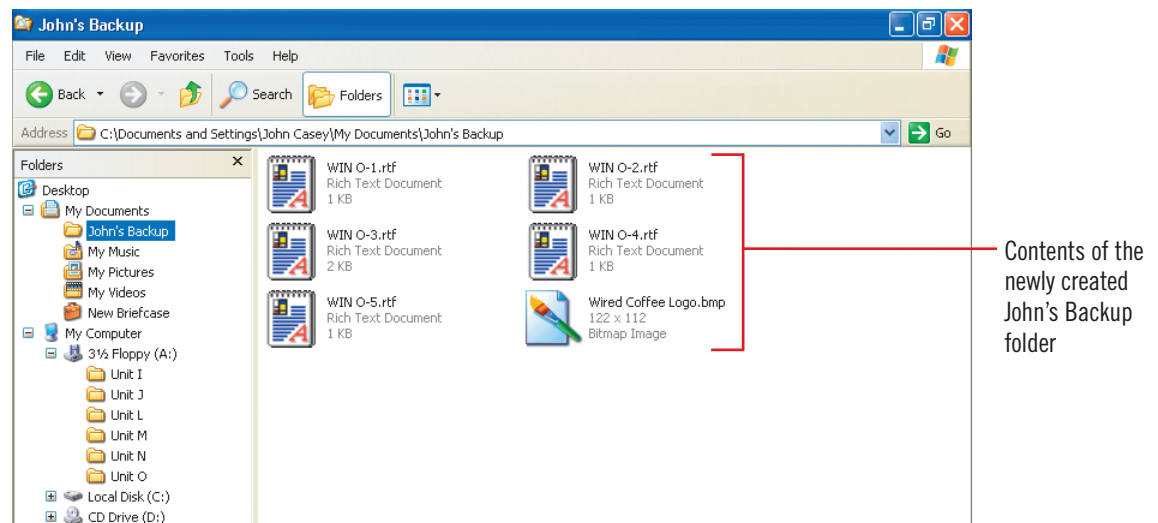
Contents of Project Files folder

New folder on hard drive in the My Documents folder

FIGURE O-3: Copy Items dialog box

Click to select John's Backup folder

FIGURE O-4: Windows Explorer with John's Backup folder

Contents of the newly created John's Backup folder

Starting Backup

Now that you have files on the hard drive to back up, you can use Backup. Because backups take time each time you perform them, you should back up only the files that change on a regular basis, and only back up all of the files on your computer at less frequent intervals. For example, because software program files don't change, you can easily reinstall them from their original program CDs or disks, so you do not need to back them up as often as your personal document files, which might change on a daily or weekly basis. Ask yourself how much work you can afford to lose. If you cannot afford to lose the work accomplished in one day, then you should back up once a day. If your work does not change much during the week, back up once a week. When you start the Backup Utility, either the Backup or Restore Wizard dialog box opens (known as Wizard Mode), in which you can back up or restore files, or the Backup Utility window opens (known as Advanced Mode), displaying the Welcome tab, in which you can start the Backup Wizard or Restore Wizard separately, or manually perform your own back up or restore files. ▰▰▰ John starts Backup to do a normal backup of his important files on the hard drive to a floppy disk.

Steps

STOP *To complete the remaining lessons in this unit you may need to install Backup. See the Read This Before You Begin for installation instructions. To finish a complete backup, you need to complete the next three lessons in order and have a blank floppy disk or your Project Disk available.*

QuickTip

You can only back up the System State data on a local computer. You cannot back up the System State data on a remote computer using a communication line.

1. Click the **Start button** on the taskbar, point to **All Programs**, point to **Accessories**, point to **System Tools**, then click **Backup**
   The Backup Utility window opens with the Welcome tab, as shown in Figure O-5, which contains options to create a new backup, restore backed up files, or create a recovery disk.

2. Click the **Backup Wizard (Advanced) button** 🖳
   The Backup Wizard dialog box opens.

3. Click **Next**
   The next Backup Wizard dialog box, shown in Figure O-6, allows you to choose the items you want to back up. You can back up every file on your computer, selected files, drives, or network data, or only the System State data. The **System State data** is a collection of Windows operating system-specific data, such as the registry and boot files, that have been customized during normal usage for your computer. When you back up your System State data and restore it after a system problem, you bring back your customized version of the files instead of the general System State data reinstalled with the Windows XP CD.

4. Click the **Back up selected files, drives, or network data option button**
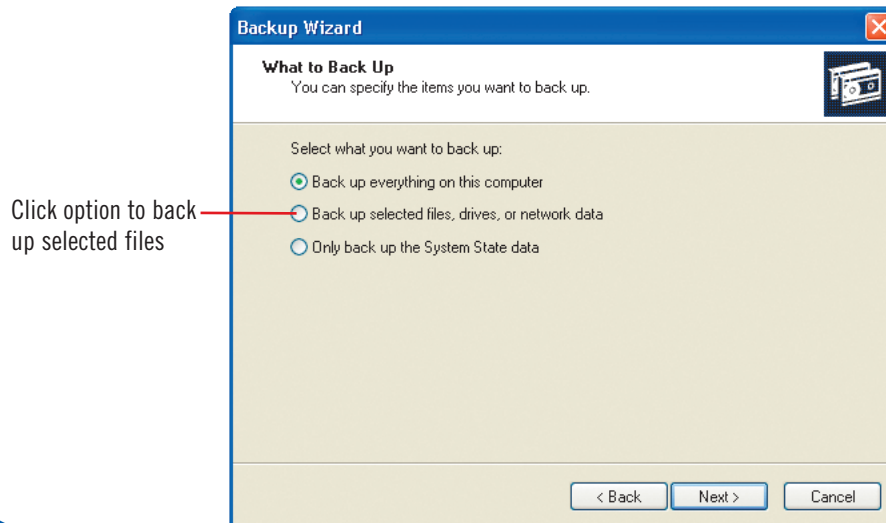
5. Click **Next**
   Leave the Backup Wizard dialog box open and continue to the next lesson, in which you will select the files to back up.

CLUES TO USE

Creating an Automated System Recovery disk

In the event of a major system failure in which you cannot start your Windows XP computer, you could lose important data and waste a lot of time trying to fix your computer. To avoid these disastrous results and prepare for possible problems in the future, you can use the Automated System Recovery Preparation Wizard to help you create a backup of your system files and an Automated System Recovery (ASR) disk to restore your system. To protect your computer, start the Backup program, click the Automated System Recovery Wizard button on the Welcome tab, read the wizard welcome screen, click Next, select a backup type and enter a backup name and location (use a tape or network location, not a floppy disk), click Next, then click Finish. The Backup program backs up your system files, then asks you to insert a disk to complete the ASR process. The ASR disk doesn't backup your personal data files, so it is a good idea to use the Backup Wizard in addition to creating a separate backup of your personal data files, so they can be restored, too.

FIGURE O-5: Backup Utility window with the Welcome tab

Click button to create a backup

Click button to restore backup files
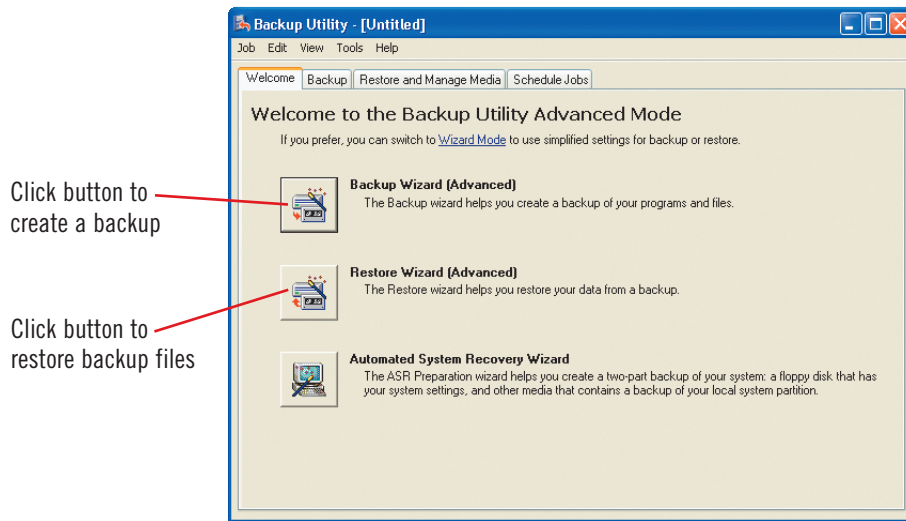
FIGURE O-6: Choosing what to back up

Click option to back up selected files

Understanding permissions to back up files and folders

You must have certain permissions to back up files and folders. If you are an administrator or a backup operator in a local group using Windows XP Professional, you can back up any file and folder on the computer to which the local group applies. However, if you are not an administrator or a backup operator, and you want to back up files, then you must be the owner of the files and folders you want to back up, or you must have one or more of the following permissions for the files and folders you want to back up: Read, Read and Execute, Modify, or Full Control. You can also restrict access to a backup file by selecting the Allow only the owner and the Administrator access to the backup data check box in the Backup Job Information dialog box. If you select this option, only an administrator or the person who created the backup file will be able to restore the files and folders. To add a user to the Backup Operators group, double-click the Administrative Tools icon in the Control Panel, double-click the Computer Management icon in the Administrative Tools window to open the Computer Management Window, click the Expand indicator next to Local Users and Groups in the console tree, click Groups in the console tree, double-click Backup Operators in the details pane, click Add in the Backup Operators Properties dialog box, type the domain and user name of the person you want to make a backup operator in the form \\Domain\user name, then click OK. For more information about using Computer Management, see Unit P, Administering Your Computer.

Selecting Files for a Backup

When backing up only some of the files on your disk, you need to display and then select the folders and files that you want to back up in the Backup Utility window. Working in this window is similar to working in Windows Explorer. To display or hide the folders located on your hard drive, click the Expand indicator ➕ or the Collapse indicator ➖ to the left of the drive or folder icon. In addition, there is a check box to the left of each storage device, folder, or file on your computer. After using ➕ and ➖ to display and hide the appropriate files, you click this check box to select the folders and files you want to back up. ✎ John needs to select the files he wants to back up.

Steps 1 2 3 4

1. In the Backup Wizard dialog box, click the **Expand indicator** ➕ to the left of the My Documents icon in the Items to back up list
   The My Documents icon expands to display all the folders and files it contains. See Table O-2 for information concerning the display of drives and folders.

2. In the Items to back up list, click the **John's Backup folder icon** (but do not click the check box)
   The files stored in the John's Backup folder appear in the right pane. To back up all the files in a folder, click the check box next to the folder in the left pane. To back up a specific file, click the check box next to the file in the right pane.

3. In the Items to back up list, click the **John's Backup folder check box** to select it
   The files in the John's Backup folder appear checked, indicating that they will be backed up, as shown in Figure O-7. The gray checked box beside the My Documents icon indicates that only some of the folders and files in that drive are selected.

4. Click **Next**, then type **Backup** in the Type a name for this backup text box if necessary
   The Backup Wizard asks you to select a backup destination, as shown in Figure O-8 (the place where you will store your backed up files). If you don't have a tape device installed on your computer, the backup media type File is selected by default and grayed out. The default destination for the backup is the 3 ½ Floppy (A:) drive; your drive might be different. The default backup file name is "Backup." The Backup file is saved with the .bkf extension, which is the extension for all backup files.

5. If necessary, insert a floppy disk or your Project Disk into the appropriate drive on your computer to save the backup file

6. Click **Next**
   The Backup Wizard dialog box displays the current backup settings. In the next lesson, you will actually perform the backup.

CLUES TO USE

Backing up and restoring files on different disk file systems

You can use Backup to back up and restore data on either FAT or NTFS volumes. However, if you have backed up data from an NTFS volume used in Windows XP, it is recommended that you restore the data to an NTFS volume used in Windows XP instead of Windows 2000, or you could lose data as well as some file and folder features. For more information about FAT and NTFS disk file systems, see Unit P, Administering Your Computer.
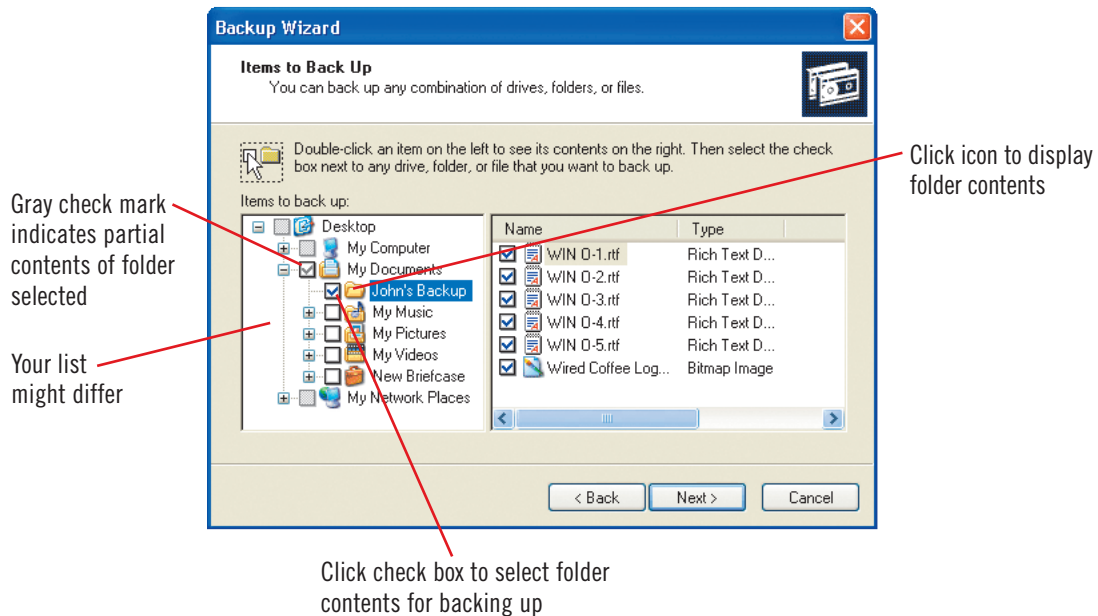
FIGURE O-7: Choosing items to back up

Click icon to display folder contents

Gray check mark indicates partial contents of folder selected

Your list might differ

Click check box to select folder contents for backing up

FIGURE O-8: Choosing where to store the backup

Click to change the backup location and filename

Backup file name
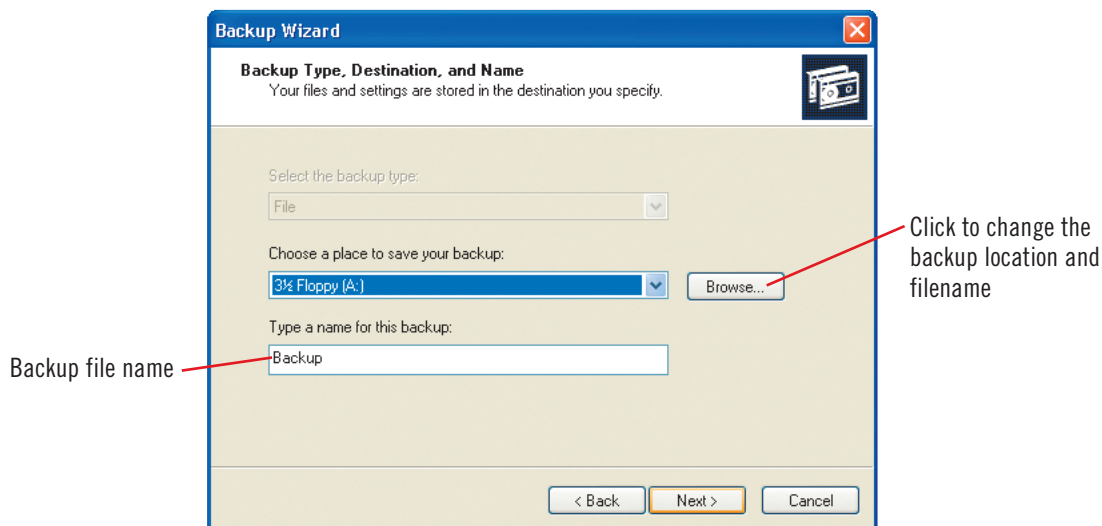
TABLE O-2: Displaying drive and folder contents

folder selection	item	function
➕	A plus sign to the left of a drive or folder	All the folders it contains are hidden
➖	A minus sign to the left of a drive or folder	All the folders it contains are displayed
	No sign to the left of a drive or folder	The folder does not contain any subfolders, although it may contain files
☑	A blue checked box to the left of a drive or folder	All the folders and files it contains are selected for backup
☑	A gray checked box to the left of a drive or folder	Only some of the folders and files it contains are selected for backup
☐	An unchecked box to the left of a drive or folder	None of the folders and files it contains are selected for backup

Unit O

Performing a Normal Backup

Once you have selected the files that you want to back up and the destination where you want to store them, you are ready to perform the backup. During the backup, Backup compresses the files you selected and copies them to a floppy or other backup location. When a file does not fit on a floppy, Backup splits the file, fitting what it can on the current floppy and then prompting you to insert the next floppy. Depending on the number and size of your files and the backup device you are using, the backup can take a few minutes to a few hours to complete. If you are planning to back up large amounts of information, such as your entire hard drive, it is best to start the backup at the end of the day and use a tape or zip drive if possible so you do not have to swap multiple floppy disks. When you perform a backup, Backup creates a **backup set**, also known as a **backup job**, which contains the compressed copies of the files you backed up. The backup job is stored in the backup file you specified in the previous lesson (in this case, Backup.bkf on the floppy drive). You can store more than one backup job in a specified backup file. John is ready to select backup options, enter a name for the backup job, then start the backup.

Steps 1 2 3 4

1. In the Backup Wizard dialog box, click **Advanced**

   The Backup Wizard asks you to select the type of backup operation to perform, as shown in Figure O-9. The Normal backup option is selected by default.

2. Click **Next**

   The Backup Wizard asks you to select options that will compare original and backup files after the backup, and compress the backup data. This is done to verify that the data was successfully backed up and to compress the backed up data to save space. The wizard also asks you to enable or disable **volume shadow copy**, which is the ability to backup files even though they are in the process of being written to, such as a database that is continually open and updated.

3. Click the **Verify data after backup check box** to select it

4. Click the **Disable volume shadow copy check box** to select it, then click **Next**

   The Backup Wizard asks you to choose whether to append this backup to the media or replace the data on the media with this backup.

5. Click the **Append this backup to the existing backups option button** if necessary, then click **Next**

   The Backup Wizard asks you to select the option to run the backup now or schedule it for later.

6. Click the **Now option button** if necessary, then click **Next**

   The Backup Wizard displays a summary of the current backup settings, as shown in Figure O-10.

7. Click **Finish**

   The Backup Progress dialog box opens with a progress meter that indicates the current backup status. If the backup requires more than one floppy disk, a dialog box appears asking you to insert another disk. Upon completion, the Backup Progress dialog box indicates that the operation is complete, as shown in Figure O-11.

8. Click **Close**

   The Backup Utility window appears.

FIGURE O-9: Choosing the type of backup

Click list arrow
to select the
type of backup
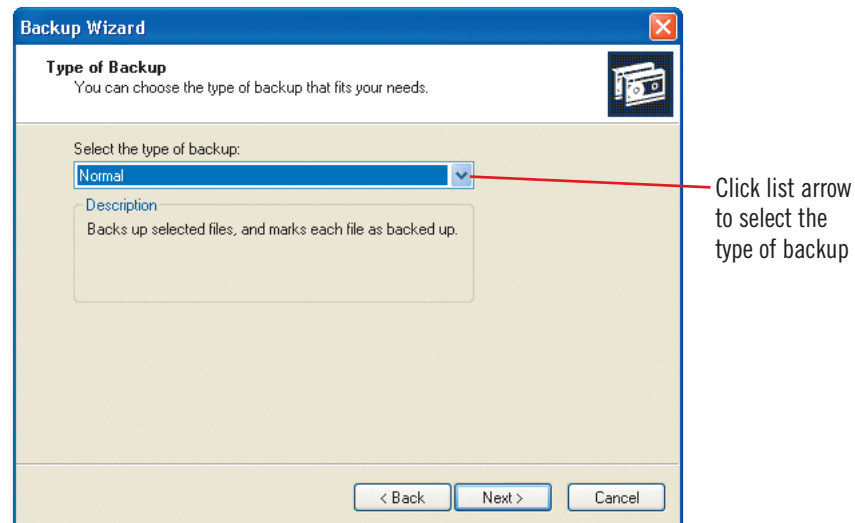
FIGURE O-10: Completing the Backup Wizard

Summary of
backup settings

Click button to
finish the backup

FIGURE O-11: Backup Progress dialog box
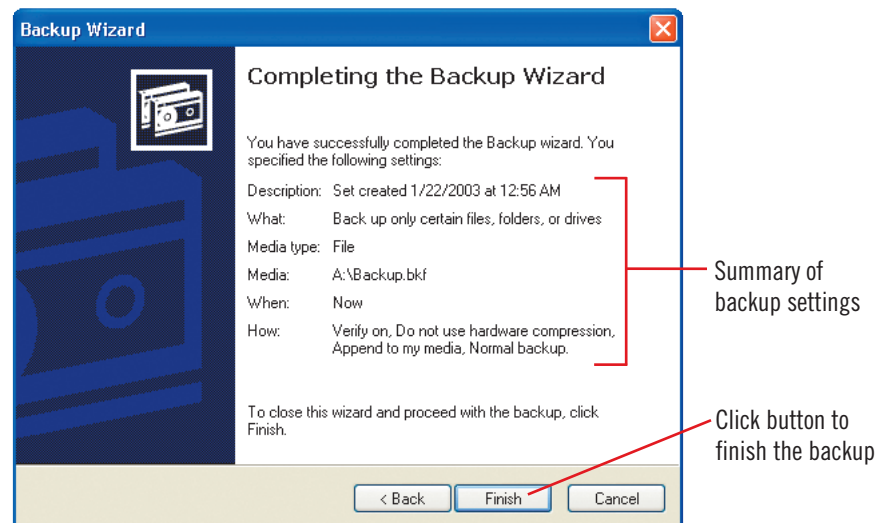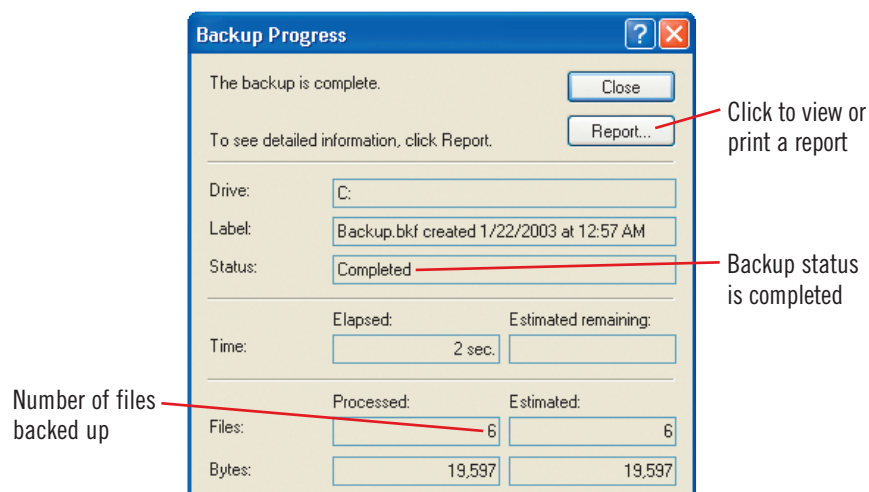

Click to view or
print a report

Backup status
is completed

Number of files
backed up

Viewing and Printing a Backup Report

After performing a backup, Backup creates a report with status information about the backup. The backup report is created in Notepad (a text-editing program that comes with Windows XP) and saved in the Backup program folder on your hard drive. Each time you perform a backup, the report information is added to the beginning of the backup report file in order to create a backup history. To make it easier to manage your backup jobs, it is important to view and print a backup report after each backup so you can have a hard copy reference of the files backed up and make sure no errors occurred. To customize your report, you can use the Report tab in the Backup Job Options dialog box to specify the items you want to include in your backup report. ✎ John wants to view the backup report, change a report option, and then print a copy. Then he will make a change to one of the files he has backed up.

Steps 123⁴

1. Click **Tools** on the Backup Utility menu bar, then click **Report**

   The Backup Reports dialog box opens with a list of backup reports performed on this computer, identified by report date, time, and backup job name. When you perform a backup immediately, instead of scheduling it for later, Backup uses "Interactive" for the backup job name instead of the backup job name you assigned.

2. Click the backup report with the current time and date you just created (the top entry), then click **View**

   Notepad opens, as shown in Figure O-12. The report lists: the type of operation and the media name; the backup set number, description, and type; the backup job start time, end time, date, number of processed files, size (in bytes) of the processed files; and the backup time. Notice that the report does not include names of the files that were backed up.

3. Click **File** on the menu bar, click **Print**, then click **Print** in the Print dialog box

4. Click the **Close button** in the Notepad window, then click **Cancel** to close the Backup Reports dialog box

   The Backup Utility window remains open.

5. Click **Tools** on the Backup Utility menu bar, click **Options**, then click the **Backup Log tab** in the Options dialog box

   The Options dialog box opens with the Backup Log tab displayed, as shown in Figure O-13. See Table O-3 for a description of the Options dialog box tabs.

6. Click the **Detailed option button**, then click **OK**

   Now when you perform the incremental backup in the next lesson, the report will list the files that were backed up.

7. Leave the Backup Utility window open, click the **Start button** on the taskbar, point to **All Programs**, point to **Accessories**, click **WordPad**, then open the document **WIN O-1** from the John's Backup folder in the My Documents folder on your hard drive

   Make sure you open the document from the correct location (the John's Backup folder in the My Documents folder on the hard drive), not from the folder where your Project Files are located. The WordPad window appears with the WIN O-1 document. This is the file you will change for the backup in the next lesson.

8. In the first paragraph, select the word **November**, then type **October**

9. Click the **Save button** 💾 on the toolbar, then click the **Close button** in the WordPad window

   Leave Backup open, then continue to the next lesson.

FIGURE O-12: Backup report in Notepad

Backup file

Number of files
backed up

Backup report
information;
yours might differ

Backup verification
information

FIGURE O-13: Options dialog box

Click option to
include filenames in
the backup report
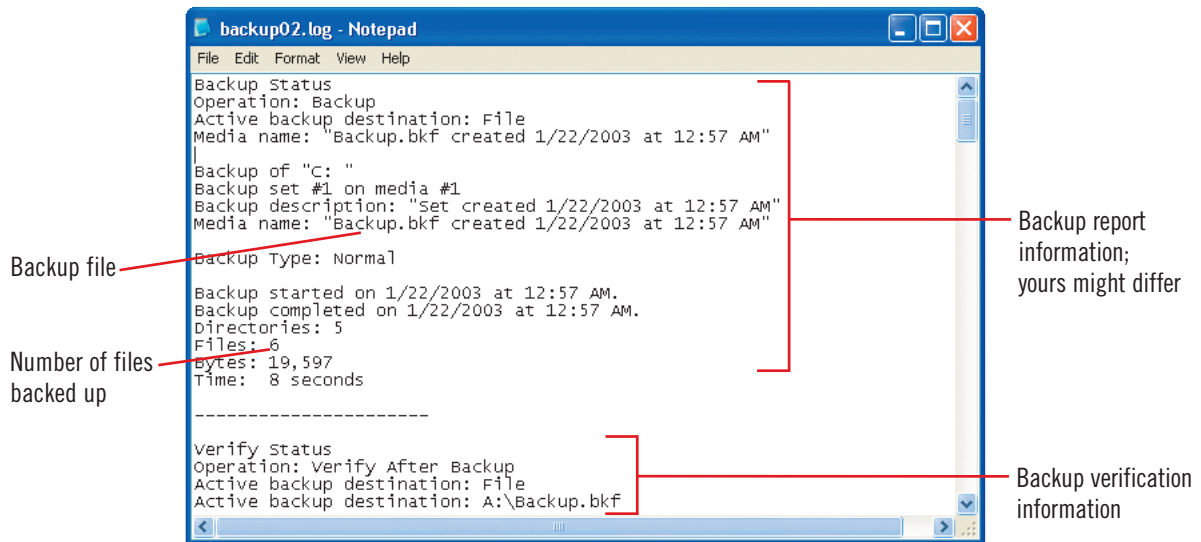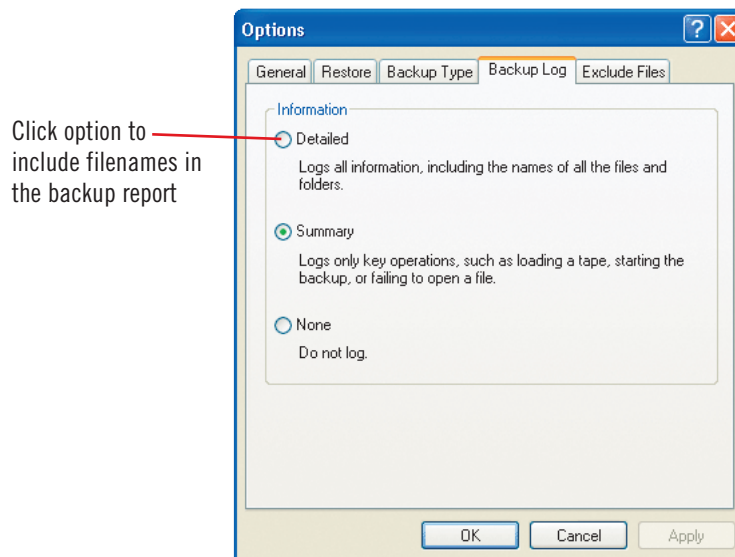
TABLE O-3: Options dialog box tabs

tab	description
General	Allows you to verify that data is successfully backed up, specify how to handle media that already contain backups, and select different types of alert messages
Restore	Allows you to specify how to restore files
Backup Type	Allows you to specify the default backup type when you start a backup
Backup Log	Allows you to specify the items you want to include in your backup report
Exclude Files	Allows you to add or remove files of a specified type to or from a backup

Performing an Incremental Backup

When you perform an incremental backup, it affects only the files that have changed since the last backup. This saves you from having to redo the entire backup every time. Files created after the date of the initial incremental backup set and files that have been renamed are not included in the incremental backup unless you select them before you start the backup operation. ✒️ John completed a complete backup of all his files, but it does not include the current version of the file he just changed. John performs an incremental backup to include the change he just made to the WIN O-1 file.

Steps 123 4

1. In the Backup Utility window, click the **Backup tab** if necessary
   The Backup tab appears. If you have already performed a backup and want to use similar settings, you can use the Backup tab to perform a quick backup. The Backup tab allows you to select the files you want to back up, change backup options, then start the backup process.

2. Click the **Expand indicator** ⊞ to the left of the My Documents icon, then click the **John's Backup folder check box** to select it
   The Backup Utility window appears with John's Backup folder selected, as shown in Figure O-14. When a folder is selected with a blue check mark, all the files in the folder are selected.

3. Click **Start Backup**
   The Backup Job Information dialog box opens. When you perform a backup, Backup creates a **backup job**, also known as a **backup set**, which contains the compressed copies of the files you backed up. The backup job is stored in the backup file you specified in the previous lesson (in this case, Backup.bkf on the floppy drive). You can store more than one backup job in a specified backup file.

4. In the Backup description text box, insert your name before the current description
   This new job name will distinguish this backup from the complete backup you performed earlier.

QuickTip

To compress backup data to a tape, click the If possible, compress the backup data to save space check box to select it in the Advanced Backup Options dialog box.

5. Click **Advanced**
   The Advanced Backup Options dialog box opens.

6. Click the **Backup Type list arrow**, click **Incremental**, click the **Disable volume shadow copy check box** to select it, click **OK** to close the Advanced Backup Options dialog box, then click **Start Backup** in the Backup Job Information dialog box
   The Backup Progress dialog box opens with a progress meter indicating current backup status. The file that changed since the last backup is backed up. Upon completion, a message dialog box opens indicating that the operation is finished.

QuickTip

To start a new report document, use the Search command on the Start menu to find the report document, then rename it. Backup creates a new report document during the next backup.

7. In the Backup Progress dialog box, click **Report**, then drag the **scroll box** to the bottom of the Notepad window
   Notepad opens with the backup report, as shown in Figure O-15. Each time you perform a backup, the backup report information is appended to the end of the report. The name of the changed file appears in the backup report.

8. Click the **Close button** in the Notepad window, then click **Close** to close the Backup Progress dialog box
   The Backup Utility window appears, in which you want to restore the report options to their original settings.

9. Click **Tools** on the menu bar, click **Options**, click the **Backup Log tab** in the Options dialog box, click the **Summary option button**, then click **OK**
   The report options are restored to the Summary option, which is the default setting.
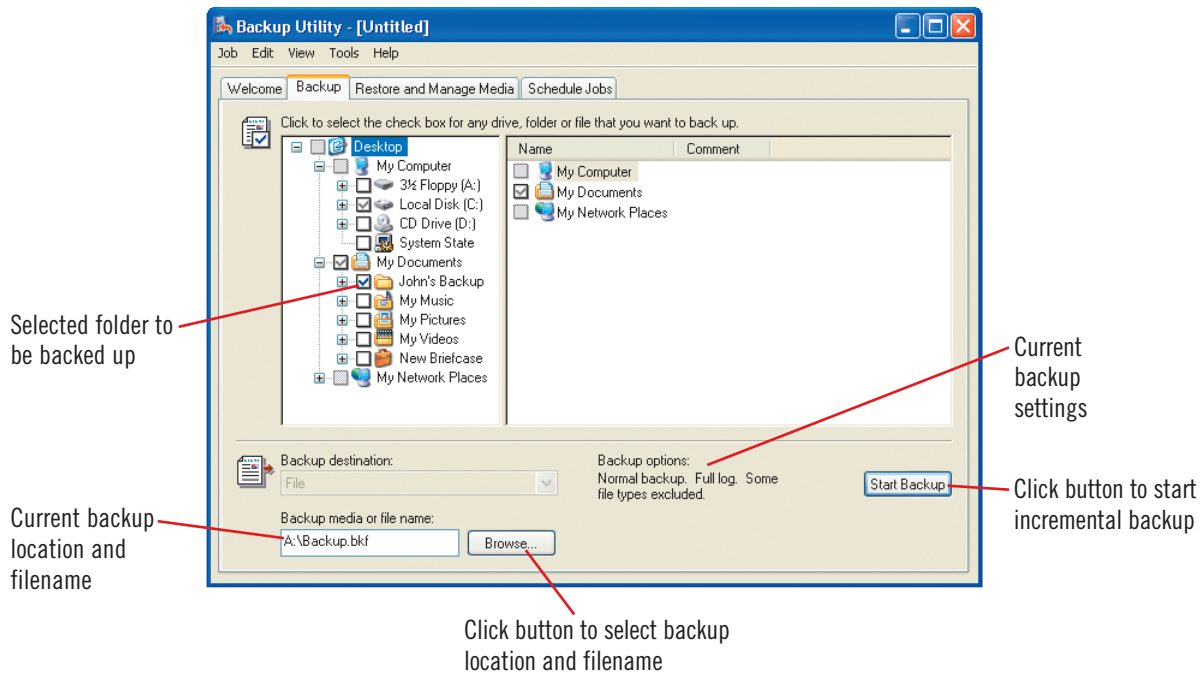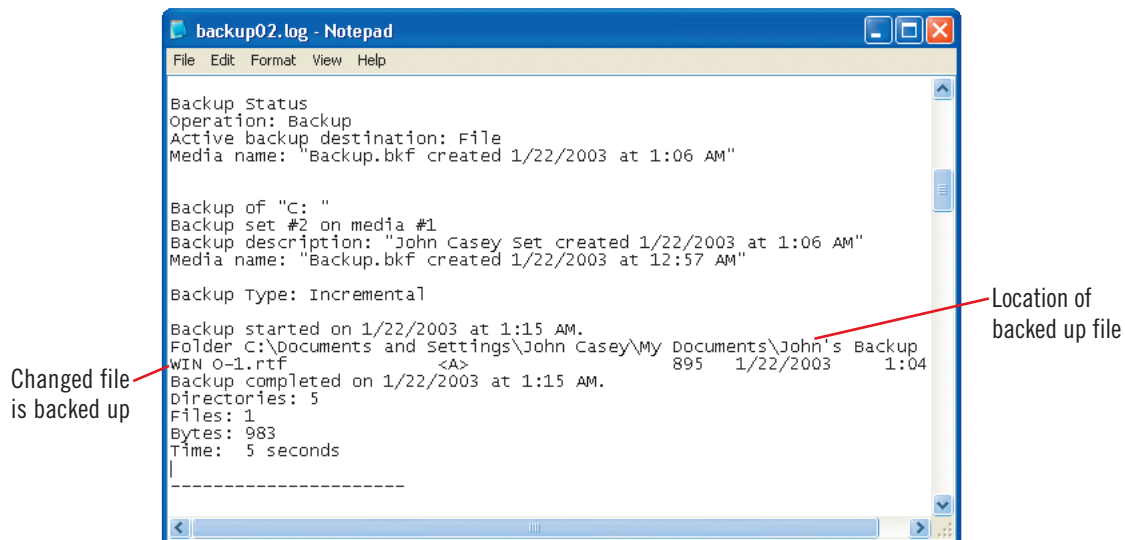
FIGURE O-14: Backup Utility window with Backup tab

Selected folder to be backed up

Current backup settings

Current backup location and filename

Click button to start incremental backup

Click button to select backup location and filename

FIGURE O-15: Backup report in Notepad

Location of backed up file

Changed file is backed up

CLUES TO USE

Using a tape drive to back up files

Using a tape drive can make backing up large amounts of information, such as an entire hard drive, fast and easy. A **tape drive** is a hardware device that reads data from and writes onto a tape. Before you use a tape drive with Backup, make sure the tape drive is compatible with Backup. For a complete list of compatible tape drives, click Help Topics on the Help menu in the Backup Utility window. After connecting the tape drive to your computer and loading a tape cartridge into the tape drive, you can click the Restore and Manage Media tab, then right-click the tape media to restore the tape tension, format or erase a tape cartridge to back up your files. To format a tape cartridge, you need to have a DC-2000-type tape drive, which requires that you format a tape before you use it.

Unit O
Windows XP

Restoring a Backed Up File

The real value in backing up your files becomes apparent if you lose or damage some files or need information from a document that has changed a great deal over time. You can restore a single file, several files, or an entire hard drive. Using the Restore Wizard, you can specify which files you want to restore and where you want them to be placed. When you create a backup set, a **catalog**, or index of the backed up files, is built and stored on the backup medium. When you store the catalog on the backup medium, it speeds up the process when you want to restore files. Instead of re-creating the catalog, the Restore function opens the catalog on the backup medium. However, if you want to restore data from several tapes, and the tape with the catalog is missing, or you want to restore data from media that is damaged, you should not select the Use the catalogs on the media option. A coworker at Wired Coffee needs the original WIN O-1 file, so he asks John to restore that file onto the hard drive.

Steps 1234

1. In the Backup Utility window, click the **Welcome tab**, click the **Restore Wizard (Advanced) button** , then click **Next**
   The Restore Wizard opens, asking you to specify the files you want to restore.

2. In the Items to restore list, click the **Expand indicator** to the left of the File icon , click to the left of the Backup.bkf icon, then click the **Backup.bkf icon**
   The Restore Wizard appears with a list of backup sets in the Backup.bkf file, as shown in Figure O-16. Your hard drive disk letter might differ.

3. In the Items to restore list, click the hard drive (C:) icon for Set 1, click to the left of the hard drive (C:) icon for Set 1, then click to the left of each folder icon until John's Backup folder appears

4. In the Items to restore list, click the **John's Backup folder** (scroll to see it if necessary), then click the **WIN O-1 file check box** to select it in the right pane
   The selected file appears checked, as shown in Figure O-17.

5. Click **Next**, then click **Advanced**
   The Restore Wizard asks you to select a destination for the restored files and folders.

6. Click **Next** to restore the file in its original location
   The Restore Wizard asks you to choose how you want to restore files that are already on disk.

7. Click the **Replace existing files option button** if necessary, then click **Next**
   The Restore Wizard asks you to select the advanced options you want to use.

8. Click **Next**, then click **Finish**
   The Restore Progress dialog box opens with a progress meter indicating current status. Upon completion, the Restore Progress dialog box indicates that the operation is complete. Notice the number of files processed, or restored, is one.

9. Click **Close** to return to the Backup Utility window
   The previous version of the WIN O-1 file is restored. John could check this by opening the restored file in WordPad.

FIGURE O-16: Restore Wizard dialog box with backup sets

Backup file; your hard disk might differ

Hard disk for backup set 1

Hard disk for backup set 2

Backup set 1

Backup set 2
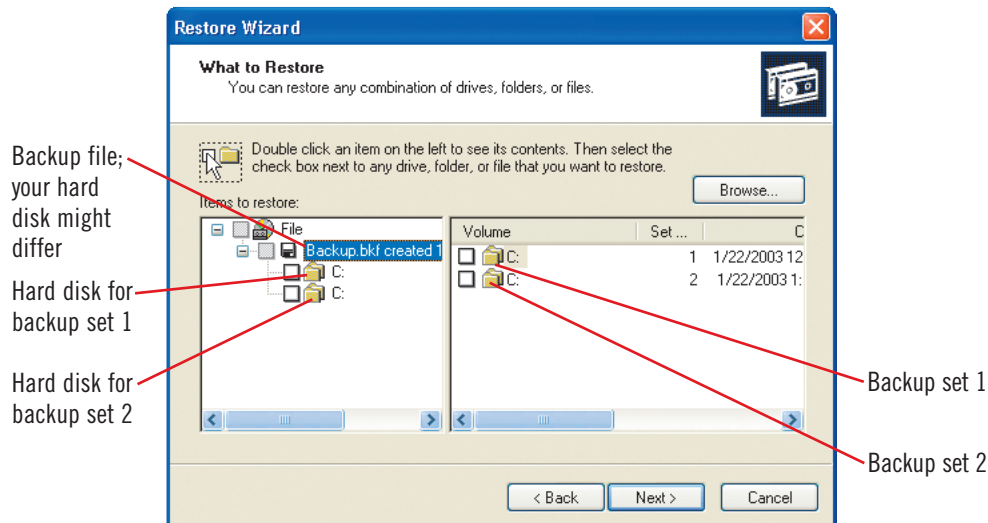
FIGURE O-17: Restore Wizard dialog box with selected file to restore

Click check box to select the file you want to restore

Your list of folders might differ

John's Backup folder; you might need to scroll to view the folder name

CLUES TO USE
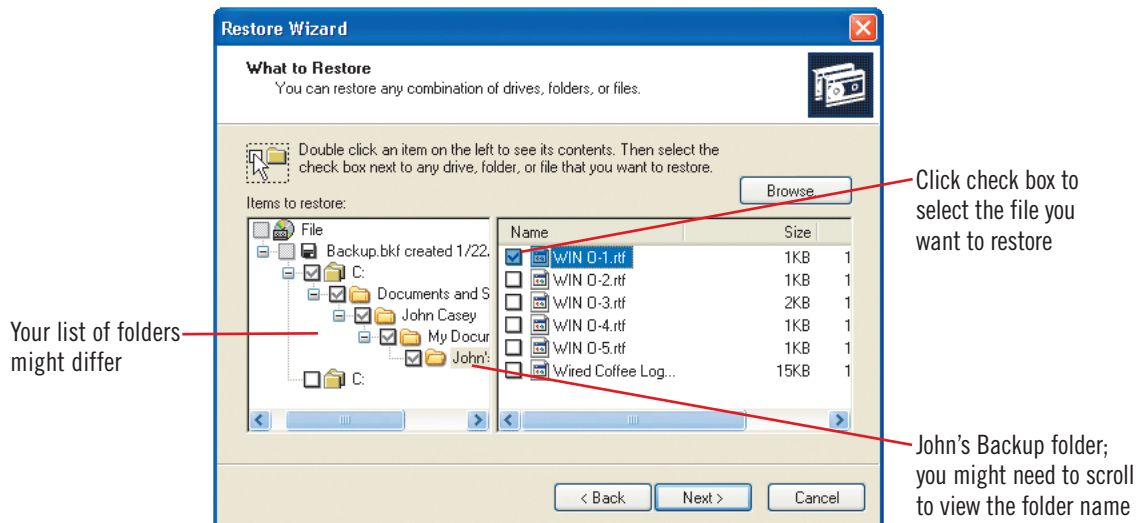
Excluding file types from a backup

When you want to backup all but a few files of a specific type on your computer, it is more efficient to back up all the files on your computer and then exclude the ones you don't want to back up instead of selecting each individual file you want to back up. To exclude file types from a backup, click Tools on the Backup Utility menu bar, click Options, click the Exclude Files tab, then click Add new under the Files excluded for all users list if you want to exclude files that are owned by all users, or click Add new under the Files excluded for user list if you want to exclude only files that you own. In the Add Excluded Files

dialog box, click the file type to exclude in the Registered file type list, or type a period and then the one, two, or three letter file extension in Custom file mask text box to exclude a custom file type. Type a path in the Applies to path text box if you want to restrict the excluded file type to a specific folder or hard disk drive, then click OK. If you restrict excluded files to a specific path or folder, the files will be restricted from all subfolders of that path unless you click the Applies to all subfolders check box to deselect it.

Deleting a Backup Set

Each time you perform a backup, Backup creates a backup set containing the backed up files. You can store more than one backup set in a backup file. After backing up files for a while, you might find a number of unneeded backup sets accumulating in a backup file. You can delete these sets quickly and easily from the backup file within Backup. When you delete a backup set, only the backup set is deleted, but the backup file, such as Backup.bkf, remains in the backup location. If you want to delete the backup file, drag the file icon into the Recycle Bin as you would any other Windows file. ✏️ John deletes old backup sets from Backup and deletes the backup file using Windows Explorer.

Steps 1 2 3 4

1. In the Backup Utility window, click the **Restore and Manage Media tab**
   The current list of backup files appears in the Backup Utility window.

2. Right-click the **Backup.bkf icon** as shown in Figure O-18, then click **Delete catalog** on the shortcut menu
   Both backup sets in this catalog are deleted.

3. Click the **Close button** in the Backup Utility window

4. Click the **Start button** on the taskbar, point to **All Programs**, point to **Accessories**, then click **Windows Explorer**
   You can use Windows Explorer to delete the John's Backup folder and backup files in order to restore your drives to their original state.

5. Click the **Expand indicator** ⊞ next to the My Documents folder if necessary, click the **John's Backup folder**, press **[Delete]**, then click **Yes** in the Confirm Folder Delete dialog box

6. Click ⊞ next to the My Computer icon, locate the drive containing your Project Files with the backup file, then click the **drive icon**
   Windows Explorer displays the contents of the floppy disk in the right pane.

7. Click the **Backup file**, press **[Delete]**, then click **Yes** to confirm the deletion

8. Click the **Close button** in the Windows Explorer window
   Now the backup jobs and John's Backup folder are deleted.

FIGURE O-18: Backup Utility window with the Restore and Manage Media tab

Backup file with two backup sets

Click command to delete the backup file

CLUES TO USE
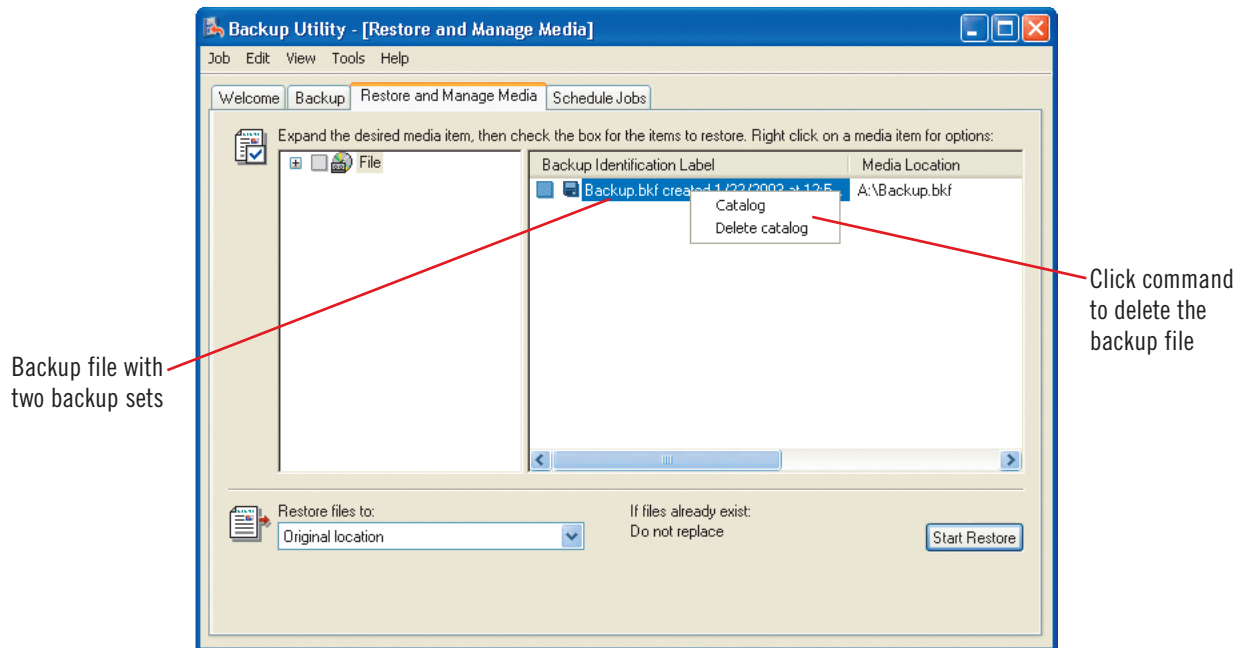
Scheduling a backup

Scheduling backups according to a backup strategy can help you perform backups on a regular basis and protect your data. Typically, late at night or on weekends, when nobody is around, is a good time to perform backups. Backup makes it easy to schedule backups any time you want to perform them. You can schedule a backup to run once, every day, every week, or every month. You can also set additional options that start or stop the backup if the computer is idle, meaning that it is not processing any tasks. To schedule a backup, click the Schedule Jobs tab in the Backup Utility window, shown in Figure O-19. Double-click the day in which you want to perform the backup to start the Backup Wizard, follow the step-by-step instructions to select what to back up, where and how to back it up, and any backup options you want until the wizard asks you when to back up the files. Enter the job name you want for the backup, click Set Schedule to open the Schedule Job dialog box displaying the Schedule tab, click the Schedule Task list arrow, select a backup interval, click the Start time up or down arrow to specify a backup time, then

click OK to return to the Backup Wizard. Click Next, enter a password twice as indicated, click OK, then click Finish. A backup schedule icon 📅 appears in the Schedule Jobs tab on the backup date. On the scheduled day and time, the Task Scheduler starts Backup and performs the backup operation.

FIGURE O-19: Backup Utility window with the Schedule Jobs tab

Practice
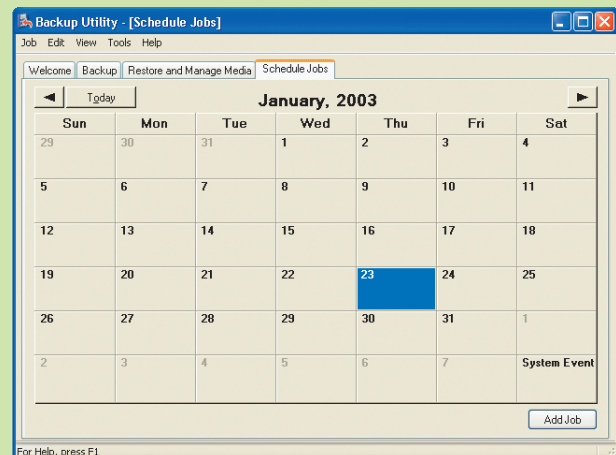
► Concepts Review

Label each element of the screen shown in Figure O-20.
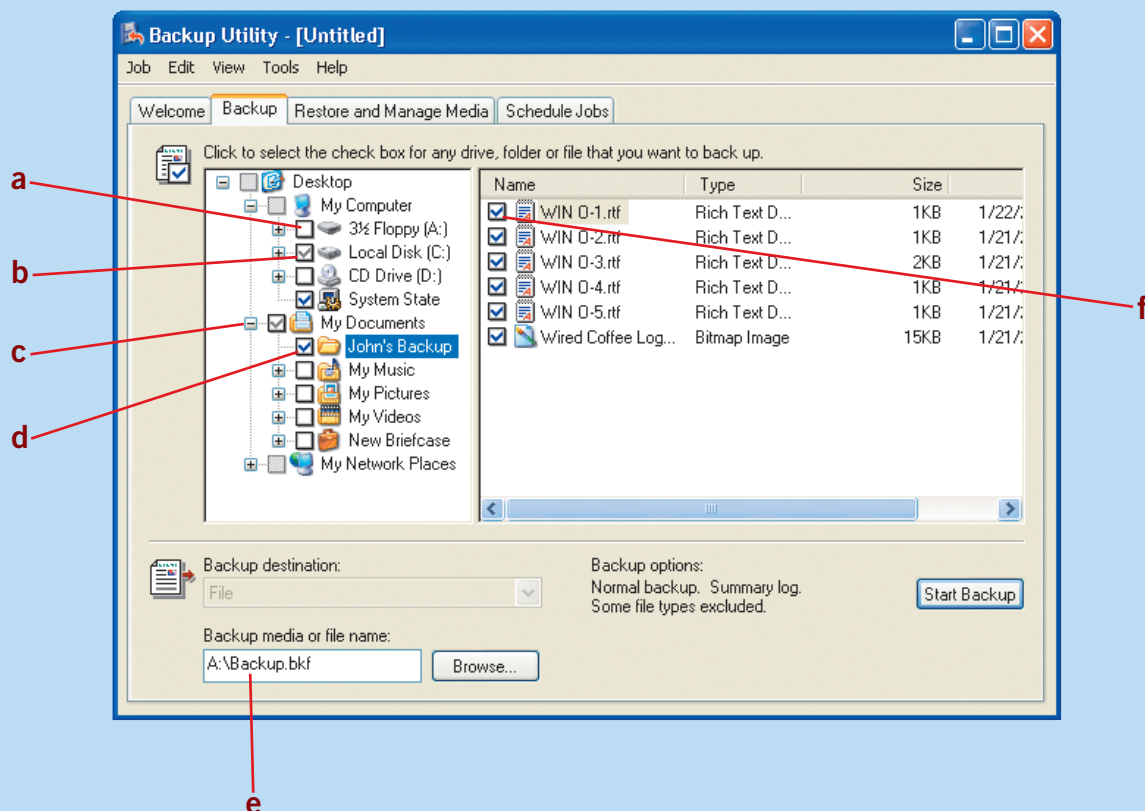
1. Which element indicates that all the folders and files the folder contains are selected for backup?
2. Which element indicates that the file is selected for backup?
3. Which element indicates that only some of the folders and files the folder contains are selected for backup?
4. Which element indicates that none of the folders and files the folder contains are selected for backup?
5. Which element indicates that all the subfolders the folder contains are displayed?
6. Which element points to the current location of the backup file?

Match each of the terms with the statement that describes its function.

7. **A backup option**
8. **Backup Wizard**
9. **Normal backup**
10. **Restore Wizard**
11. **A backup set**
12. **Differential backup**

a. Backs up files
b. Retrieves files
c. Clears archive attributes
d. Saved in backup file
e. Verifies a backup
f. Does not clear archived attributes

Select the best answer from the list of choices.

13. Which of the following is NOT a feature of Backup?
- **a.** Compresses files as it copies them
- **b.** Backs up floppy to floppy
- **c.** Splits large files across two or more floppies
- **d.** Automatically detects tape drives

14. Which of the following is something you CANNOT do with Backup?
- **a.** Back up files
- **b.** Modify files
- **c.** Verify files
- **d.** Restore files

15. A gray checkmark next to a folder indicates that
- **a.** All of the folders and files are selected.
- **b.** Some of the files are selected.
- **c.** Some of the subfolders and files are selected.
- **d.** All of the files are selected.

16. Which backup type copies only files that have changed since the last backup?
- **a.** Daily
- **b.** Normal
- **c.** Incremental
- **d.** System State data

▶ Skills Review

1. Copy files to a hard drive.
- **a.** Start Windows Explorer, then in the My Documents folder, create a new folder called **Backup Files**.
- **b.** In the Folders list, display the drive and folder where your Project Files are located.
- **c.** Copy all the files in your Project Files folder to the Backup Files folder, then close Windows Explorer.

2. Start Backup.
- **a.** Start Backup. If the Backup or Restore Wizard opens, click the Advanced Mode link.
- **b.** Click the Backup Wizard (Advanced) button, then click Next.
- **c.** Click the Back up selected files, drives, or network data option button, then click Next.

3. Select files for a backup.
- **a.** In the Items to back up list, click the Expand indicator to the left of the My Documents icon.
- **b.** Click the Backup Files folder icon, click the Backup Files folder check box to select it, then click Next.
- **c.** If necessary, insert a floppy disk or your Project Disk into the appropriate drive on your computer.
- **d.** Type **WiredBackup** as the backup name, then click Next.

4. Perform a normal backup.
- **a.** In the Backup Wizard dialog box, click Advanced, select the Normal backup type if necessary, then click Next.
- **b.** Select the Verify data after backup check box, select the Disable volume shadow copy check box, click Next, click the Append this backup to the existing backups option button if necessary, then click Next.
- **c.** Click the Now option button if necessary, click Next, click Finish, then click Close in the Backup Progress window when done.

5. View and print a backup report.
- **a.** Click Tools on the menu bar, then click Report.
- **b.** Click the backup report with the current time and date you just created, then click View.
- **c.** Drag the scroll box to the bottom of the Notepad window to read the report status, close Notepad, then click Cancel.
- **d.** Click Tools on the menu bar, click Options, then click the Backup Log tab.
- **e.** Click the Detailed option button, then click OK.
- **f.** Start Paint, then open the file Wired Coffee Logo from the Backup Files folder.
- **g.** Add the text **Great Coffee!** to the image, save the file, then close Paint.

6. Perform a differential backup.
- **a.** Click the Backup tab in the Backup Utility dialog box. Click the Expand indicator to the left of the My Documents icon, click the Backup Files folder check box to select it, then click Start Backup.
- **b.** In the Backup description text box, insert the text **Wired Coffee** before the current description.

    c. Click Advanced, click the Backup Type list arrow, then click Differential.

    d. Click the Disable volume shadow copy check box to select it, click OK, then click Start Backup.

    e. Click Report, then drag the scroll box to the bottom of the Notepad window to read the report status.

    f. Click the Close button in the Notepad window, then click Close in the Backup Progress dialog box.

    g. Click Tools on the menu bar, click Options, click the Backup Log tab, click the Summary option button, then click OK.

7. **Restore a backed up file.**

    a. Click the Welcome tab, click the Restore Wizard (Advanced) button, then click Next.

    b. Click the Expand indicator to the left of the File icon, click the Expand indicator to the left of the WiredBackup.bkf icon, then click the WiredBackup.bkf icon.

    c. Click the hard drive icon for Set 1, click the Expand indicator to the left of the hard drive icon for Set 1, then click the Expand indicator to the left of each folder icon until the Backup Files folder appears.

    d. Click the Backup Files folder, then click the Wired Coffee Logo file check box in the right list box.

    e. Click Next, click Advanced, click Next, click the Replace existing files option button if necessary, then click Next.

    f. Click Next, click Finish, then click Close.

8. **Delete a backup job.**

    a. Click the Restore and Manage Media tab. Right-click the WiredBackup.bkf icon, then click Delete catalog.

    b. Click the Close button in the Backup Utility window.

    c. Start Windows Explorer, then delete the Backup Files folder in the My Documents folder.

    d. Delete the WiredBackup.bkf file on the floppy disk, then Close Windows Explorer.

▶ Independent Challenge 1

You are the manager of the computer systems division for Global Telecommunications, Inc. (GTI), a worldwide manufacturer and distributor of telephone systems. To help safe guard the computer systems, you want to create a consistent backup strategy that systems administrators at each location can implement.

    a. Use WordPad to create a document that explains a strategy and the necessary steps for backing up network drives. Save the file as **Backup Strategy** to the drive and folder where your Project Files are located.

    b. Implement the backup strategy. Take at least one print screen of a wizard dialog box or the Backup Utility window as you go through the material, and insert the picture in the WordPad document. To take a print screen of the current window and then insert it into the WordPad document, press [Alt][Print Screen], switch to the WordPad document, click where you want the picture, then click the Paste button on the WordPad toolbar.

    c. Save the document, print it, then close WordPad.

▶ Independent Challenge 2

You are an associate at Andersen, Williams & Barnes law firm. You are creating a California corporation, and need to fill out corporation forms for the state, create bylaws, and hold board meetings.

    In this challenge, you will create your own information. Assume the following facts about the corporation:

- Corporation name: IntSoft, Inc.
- Business: Develop testing tools for Windows software developers
- Ownership: Dorian Golu, 6,000 shares (60%); and John Yokela, 4,000 shares (40%)
- Address: 722 Main Street, Suite 100, Silicon Valley, CA 90028

    a. Using Windows Explorer, create a folder named **IntSoft 02** in the My Documents folder.

    b. Using WordPad, create the following documents in the IntSoft 02 folder:

- A document stating the above information called **INTAOI**

- Board meeting minutes, called **INT BM 001**, stating all the steps to create the corporation have been taken
- A bill for services called **INT Bill 001**

c. Start Backup, then insert a floppy disk into the appropriate drive.

d. Start the backup, create a new backup job, then back up the selected files that you created in WordPad.

e. Back up the files to a floppy disk as **Important**.

f. Select the files that you created with WordPad, then perform the normal backup, disable volume shadow copy, and print a report if necessary.

g. Add billing information to INT Bill 001, save the document, then perform an incremental backup and disable volume shadow copy.

h. Add **INT BKUP** to the backup description, then restore the changed file and verify that the incremental backup stored the latest version.

i. Delete the backup jobs, then using Windows Explorer, delete the IntSoft 02 folder and the backup file on the floppy disk or your Project Disk.

▶ Independent Challenge 3

You are a graphic artist for Zero Gravity Designs, Inc., a company that specializes in logos. A real estate developer asks you to create a logo for his company, called Syntec, Inc.

a. Using Windows Explorer, create a folder named **Syntec** in the My Documents folder.

b. Using Paint, create at least three Paint documents with different logo designs, then save them in the Syntec folder.

c. Start Backup, then insert a floppy disk into the appropriate drive.

d. Start the backup, create a new backup job, then back up the selected files that you created in Paint.

e. Back up the files to a floppy disk as **Syntec Files**.

f. Select the files that you created with Paint, then perform the normal backup and disable volume shadow copy.

g. Revise at least two designs, save the documents, then perform an incremental backup and disable volume shadow copy.

h. Add **SYN BKUP** to the backup description, print a report if requested by instructor, then delete the backup jobs.

i. Using Windows Explorer, delete the Syntec folder and the backup file on the floppy disk or your Project Disk.

▶ Independent Challenge 4

You own a company called Safety One, Inc., that specializes in gun safety training programs for police academies and the general public. You need to create a class outline and a letter for an introductory gun safety class.

a. Using Windows Explorer, create a folder named **Safety 1** in the My Documents folder.

b. Using WordPad, create the following documents in the Safety 1 folder:

- An outline called **GS 101 Outline** for the Gun Safety 101 class
- A letter called **GS Comments** to friends at the police department asking for comments on the outline

c. Start Backup, then insert a floppy disk or your Project Disk into the appropriate drive.

d. Start the backup, create a new backup job, then back up the selected files that you created in WordPad.

e. Back up the files to a floppy disk or your Project Disk as **Safety One**.

f. Select the files that you created with WordPad, then perform the normal backup, disable volume shadow copy, and print a report if requested by your instructor.

g. Revise the GS 101 Outline document, then save the document.

h. Perform a differential backup, disable volume shadow copy, then add **SO BKUP** to the backup description.

i. Restore the GS 101 Outline document from the backup job, print a report if requested by your instructor, then delete the backup jobs.

j. Using Windows Explorer, delete the Safety 1 folder and the backup file on the floppy disk or your Project Disk.

► Visual Workshop

Re-create the screen shown in Figure O-21, which displays the Notepad window with a backup report. Your hard drive folders and backup location might be different. Print the report in Notepad or print the screen. (Press [Print Screen] to make a copy of the screen, open Paint, click Edit on the menu bar, click Paste to paste the screen into Paint, then click Yes to paste the large image if necessary. Click the Text button on the Toolbox, click a blank area in the Paint work area, then type your name. Click File on the menu bar, click Page Setup, change 100 % normal size to 50% in the Scaling area, then click OK. Click File on the menu bar, click Print, then click Print.) Upon completion, delete the backup catalog in the Backup Utility window, then delete the backup file in My Computer in which you stored the file.

FIGURE O-21

```
backup02.log - Notepad

File   Edit   Format   View   Help

Restore Status
Operation: Restore

Backup of "C:", Restored to"C: "
Backup set #1 on media #1
Backup description: "Set created 1/22/2003 at 3:27 AM"

Restore started on 1/22/2003 at 4:24 AM.
Folder C:\Documents and Settings\John Casey\My Documents\Backup Files
WIN O-4.rtf                                      14966    1/21/2003
Restore completed on 1/22/2003 at 4:24 AM.
Directories: 5
Files: 1
Bytes: 14,966
Time:  6 seconds

---------------------
```